## **ABSTRACT**

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The present invention provides a method for producing a catalyst comprising the steps of: producing a metal salt solution containing salts of one or more metals; dispersing the metal salt solution, an organic matter and a porous carrier made of one or more metal oxides in a solvent to form a composite complex comprising one or more metal ions having 10 to 50,000 atoms, the organic matter bonded to the metal ions, and simultaneously make the composite complex carried on the porous carrier; and calcining the carrier having the composite complex carried thereon. The method may further comprise a step of reducing the metal ions on the porous carrier by reducing the carrier, after the step of making the composite complex carried on the carrier.